

### **Abstract of the Disclosure**

A process and apparatus for highly efficient production of industrial gases by the cryogenic distillation of air, wherein a feed stream of compressed air, is supercharged to high pressure, cooled, and mixed with various recycle streams of supercharged air, to regulate the expander turbine operating temperature. The need for pre-cooling equipment downstream of the supercharger, which is widely employed in industry to manage the temperature of the incoming compressed air stream, is eliminated.